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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SAYADIAN, HRAYR A	

ART UNIT	PAPER NUMBER
2828	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/785,944	FERMANN, MARTIN E.	
	Examiner	Art Unit	
	Hrayr A. Sayadian	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2006*.

2a)☐ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-50 and 55-58* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-50 and 55-58* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election Requirement

1. Applicant is required under 35 U.S.C. § 121 to elect a single disclosed species from the ones described below.

2. This application and pending claims are directed to the following patentably distinct species:

A1. An embodiment described in [0047]-[0061] (the First Embodiment, as described with respect to FIG. 1A[sic]). The mutually exclusive characteristics for Species A1 is/are described in [0055]. Specifically, this embodiment is directed to end pumped multimode fiber.

A2. An embodiment described in [0062] (the alterative Embodiment, as described with respect to FIG. 4). The mutually exclusive characteristics for Species A2 is/are described in [0062]. Specifically, this embodiment is directed to side pumped multimode fiber.

B1. An embodiment described in [0047]-[0062] (the First Embodiment, as described with respect to FIGs. 1 and 4). The mutually exclusive characteristics for Species B1 is/are the using of a single single mode fiber.

B2. An embodiment described in [0063] – [0065] (the alternative Embodiment, as described with respect to FIG. 5). The mutually exclusive characteristics for Species B2 is/are described in [0063]. Specifically, this embodiment is directed to using two single mode fibers, one of these single mode fibers have positive dispersion.

B21. An embodiment described in [0064] (as described with respect to FIG. 5). The mutually exclusive characteristics for Species B21 is/are described in [0064]. Specifically, this embodiment is directed to using two single mode fibers, with a total dispersion inside the cavity being adjusted to be zero.

B22. An embodiment described in [0064] (as described with respect to FIG. 5). The mutually exclusive characteristics for Species B2 is/are described in [0064]. Specifically, this embodiment is directed to using two single mode fibers, with a total dispersion inside the cavity being adjusted to be positive.

B221. An embodiment described in [0066] (as described with respect to FIG. 5). The mutually exclusive characteristics for Species B221 is/are described in [0066]. Specifically, this embodiment is directed to using two single mode fibers, with a total dispersion inside the cavity being adjusted to be positive using a periodically poled LiNBO3.

B222. An embodiment described in [0066] (as described with respect to FIG. 5). The mutually exclusive characteristics for Species B222 is/are described in [0066]. Specifically, this embodiment is directed to using two single mode fibers, with a total dispersion inside the cavity being adjusted to be positive using bulk-optics dispersion compensation elements.

B223. An embodiment described in [0067] (as described with respect to FIG. 5). The mutually exclusive characteristics for Species B223 is/are described in [0067]. Specifically, this embodiment is directed to using two single mode fibers, with a total dispersion inside the cavity being adjusted to be positive using frequency doubling.

B224. An embodiment described in [0067] (as described with respect to FIG. 5). The mutually exclusive characteristics for Species B224 is/are described in [0067]. Specifically, this embodiment is directed to using two single mode fibers, with a total dispersion inside the cavity being adjusted to be positive using Raman generation.

B225. An embodiment described in [0067] (as described with respect to FIG. 5). The mutually exclusive characteristics for Species B225 is/are described in [0067]. Specifically, this embodiment is directed to using two single mode fibers, with a total dispersion inside the cavity being adjusted to be positive using four-wave mixing.

C1. An embodiment described in [0068] (the alternative Embodiment, as described with respect to FIG. 6). The mutually exclusive characteristics for Species C1 is/are described in [0068]. Specifically, this embodiment is directed to inserting a chirped fiber grating such as a Bragg grating 83.

C2. An embodiment indirectly described with in [0068]. The mutually exclusive characteristics for Species C2 is/are described in [0068]. Specifically, this embodiment is directed to NOT inserting a chirped fiber grating such as a Bragg grating 83.

D1. An embodiment indirectly described with in [0070]. The mutually exclusive characteristics for Species D1 is/are described in [0070]. Specifically, this embodiment is directed to using polarization non- maintaining multi-mode fiber.

D2. An embodiment indirectly described with in [0070]. The mutually exclusive characteristics for Species D2 is/are described in [0070]. Specifically, this embodiment is directed to using polarization maintaining multi-mode fiber having an elliptical core (see, for example, FIG. 7a).

D3. An embodiment indirectly described with in [0070]. The mutually exclusive characteristics for Species D3 is/are described in [0070]. Specifically, this embodiment is directed to using polarization maintaining multi-mode fiber that is stressed (see, for example, FIG. 7b).

E1. An embodiment indirectly described with in [0071]. The mutually exclusive characteristics for Species E1 is/are described in [0071]. Specifically, this embodiment is directed to coupling between the multi-mode and single mode fibers being through bulk optics in free space (see, for example, FIG. 9a).

E2. An embodiment indirectly described with in [0071]. The mutually exclusive characteristics for Species E2 is/are described in [0071]. Specifically, this embodiment is directed to coupling between the multi-mode and single mode fibers being through a splice (see, for example, FIG. 9b).

E3. An embodiment indirectly described with in [0071]. The mutually exclusive characteristics for Species E3 is/are described in [0071]. Specifically, this embodiment is directed to coupling between the multi-mode and single mode fibers being through a taper (see, for example, FIG. 9c).

F1. An embodiment indirectly described with in [0072]. The mutually exclusive characteristics for Species F1 is/are described in [0072]. Specifically, this embodiment is directed to using a single mode fiber to limit the power to the fundamental mode of the multi-mode.

F2. An embodiment indirectly described with in [0072]. The mutually exclusive characteristics for Species F2 is/are described in [0072]. Specifically, this embodiment is directed to using a multi-mode fiber having Bragg grating written into it to limit the power to the fundamental mode of the multi-mode fiber.

G1. An embodiment indirectly described with in [0073]. The mutually exclusive characteristics for Species G1 is/are described in [0073]. Specifically, this embodiment is directed to passive mode-locking

G2. An embodiment indirectly described with in [0073]. The mutually exclusive characteristics for Species G2 is/are described in [0073]. Specifically, this embodiment is directed to active mode-locking

3. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species ((one of A1 or A2), and (one of B1, B21, B221, B222, B223, B224, or B225), and (one of C1 or C2), and (one of D1, D2, or D3), and (one of E1, E2, E3), and (one of F1 or F2), and (one of G1 or G2)), even though this requirement is traversed. Applicant is advised that a reply to this requirement must include:

1. an identification of the species that is elected consonant with this requirement, and
2. a listing of all claims readable thereon, including any claims subsequently added.

An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

If claims are added after the election, applicant must indicate which are readable upon the elected species. M.P.E.P. § 809.02(a).

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141.

CLOSURE

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hrayr A. Sayadian whose telephone number is (571) 272-7779. The examiner can normally be reached Monday through Friday, 7:30 am-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun O. Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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MINSUN OH HARVEY
PRIMARY EXAMINER